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| 10/582,198 | 06/09/2006 | Yang Shen | 0002860USU/4137 | 3977 |

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| EXAMINER |
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FULTON, KRISTINA ROSE

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| ART UNIT | PAPER NUMBER |
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05/28/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

| | | | |
|------------------------------|---------------------------------------|-----------------------------------|--|
| Office Action Summary | Application No. 10/582,198 | Applicant(s) SHEN, YANG | |
| | Examiner Kristina R. Fulton | Art Unit 3673 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 April 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 7-27 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 7-27 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

This Office Action is in response to the RCE submitted 4/17/08. Claims 1-6 are cancelled. Claims 7-27 are newly added.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 7-12, 16-22 and 25-27 are rejected under 35 U.S.C. 102(b) as being anticipated by Boag (US 4966021).

3. Regarding claims 7 and 22, Boag shows a key-changeable lock, including a lock housing (20), a lock cylinder (10) able to rotate within the lock housing about a rotational axis, said lock cylinder including at least, a locking block (44) slidably mounted on a periphery of said locking cylinder, to be located in one of two working positions, in a first working position said locking block extends from the lock cylinder to engage the lock housing preventing rotation of the lock cylinder (figure 7) relative the lock housing and in a second working position, the locking block at least partially retracts into the lock cylinder (figure 6) to allow said relative rotation, at least one toothed piece (40) to move to selectively allow or block retraction of said locking block into said lock cylinder, at least one toothed slide (36) to move in said lock cylinder, transverse to said rotational axis, said toothed slide having an engaged and disengaged position with said at least

one toothed piece, said at least one toothed piece moving in a fixed relationship with said at least one toothed slide when in said engaged position, and in a variable relationship when in said disengaged position, a sliding block (34) adapted to move said at least one toothed slide between said engaged and disengaged positions, and a locking hole (26) provided on or in the lock cylinder and into which a key (118 or 218) is inserted, characterized in that insertion of a first key into a locking hole, moves said at least one toothed slide and in turn said at least one toothed piece, in said engaged position therewith, to allow retraction of said locking block and thus rotation of said lock cylinder, retraction of said at least one toothed piece into said lock cylinder, prevents said locking block from moving, and moves said at least one toothed slide to said disengaged position via said sliding block, and removal of said first key and insertion of a second key moves said at least one toothed slide and varies the relation of said at least one toothed slide and said toothed piece, due to said disengaged position, such that said second key now locks and unlocks said key changeable lock or subassembly therefore (see abstract for description of first and second key).

4. Regarding claim 8, the first key is removed and said second key is inserted with said cylinder in a partially rotated condition (see abstract and figures 6-7).

5. Regarding claim 9, the engagement of said toothed slide with said toothed piece is via a toothed piece (see figures 6 and 7 for illustration of teeth) on said toothed slide engaging a toothed piece (see figures 6 and 7 for illustration of teeth) on said toothed piece, there being more teeth on one than the other to allow said variable relationship.

6. Regarding claim 10, said toothed piece has a block groove (slot in top of 40 for insertion of 44) thereon running parallel to said locking block, said toothed piece, either side of said block groove, toothed retraction of said locking block, other than when said toothed piece is moved to allow said locking block to retract into said toothed groove.

7. Regarding claim 11, said locking block is urged into said block groove, and is held in the block groove, by the profile of said lock housing about said lock cylinder, when said lock is unlocked (see figure 6).

8. Regarding claim 12, said sliding block is moved by said locking block via pins (tipped surface of 44) extending between said locking block and said sliding block.

9. Regarding claim 16, the sliding block and the toothed slide move parallel to one another.

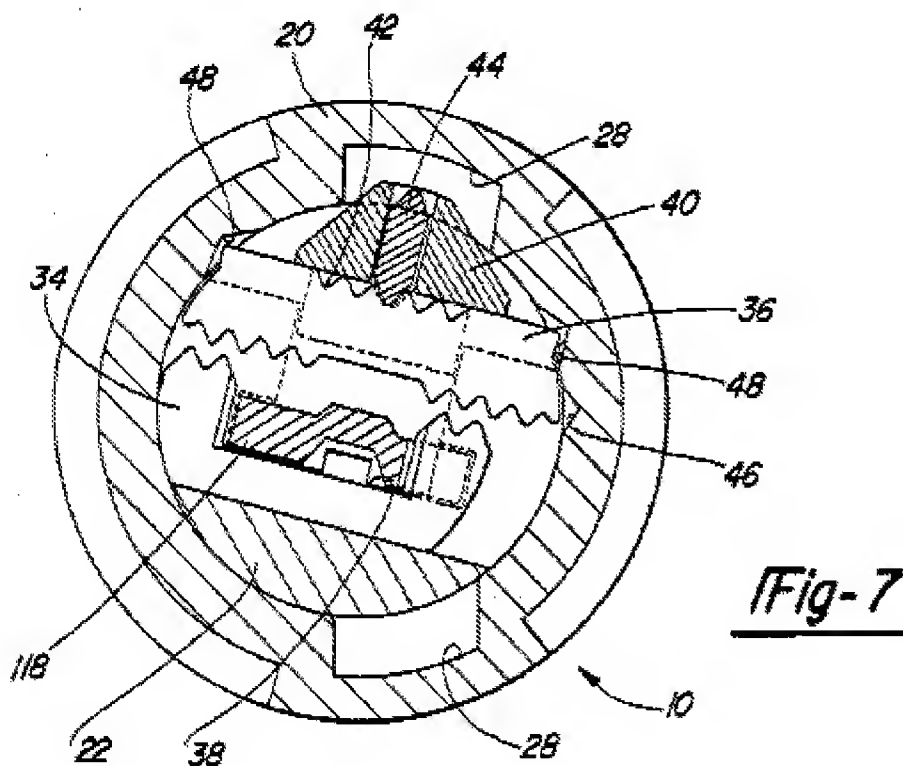
10. Regarding claims 17 and 25, the sliding direction of the sliding block is perpendicular to that of the toothed piece.

11. Regarding claim 18, "as best understood", the first key will not unlock the lock when lock has been changed to lock and unlock with said second key (see abstract).

12. Regarding claim 19, the sliding direction of the locking block is parallel to that of the sliding block.

13. Regarding claims 20 and 26, wherein a contactor (the side surface) is fixed on the toothed slide and located within the locking hole to engage said key. Applicant is reminded, as claimed, a "contactor" can be anything that "contacts". More structure should be claimed to better define the contactor.

14. Regarding claims 21 and 27, a locking groove (28) is provided on the lock housing; when the locking block is located at the first working position, the locking block is received in the locking groove; and each side face of the locking groove is provided with a guiding slant (see figure 7 for slanted edges). See the Boag device below.



Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Art Unit: 3673

2. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

3. Claims 13-15 and 23-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Boag as applied to claim 7 above in view of Loreti (US 6119495). Boag shows applicant's basic inventive concept but fails to show spring bias components. Loreti shows that it is well known in the key cylinder art to include springs. Loreti shows a key-changeable lock, comprising a lock cylinder (9), a sliding block (18), toothed slides (17), and a toothed piece (20).

4. Regarding claims 13 and 23, Loreti shows springs (19) are provided between the sliding block and the shell.

5. Regarding claims 14-15 and 24, Loreti shows a compression spring (26) is provided between the toothed slide and the sliding block.

6. Regarding claims 13-15 and 23-24, it would have been obvious to one of ordinary skill in the art to include springs in the cylinder to assure proper engagement and movement of the components within the cylinder. It is very well known in the art to use springs. See the Loreti device below.

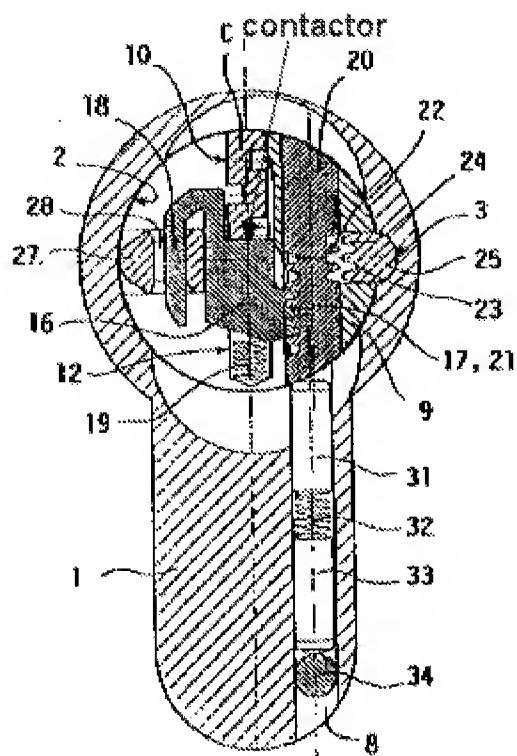


FIG. 18

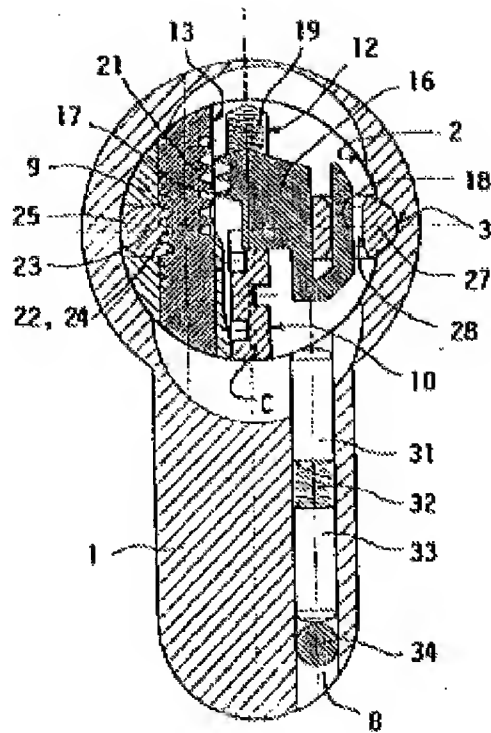


FIG. 19

Response to Arguments

1. Applicant's arguments filed 4/17/08 have been fully considered but they are not persuasive. Regarding the argument that the locking block does not perform as explained in paragraphs 3-5 of the remarks, the examiner would like to note that the function and detail of the remarks are not included in the claims. The claims merely

require the locking block to be located in one of two positions (blocked and unblocked).

The examiner suggests adding more of the function and language explained in the remarks to the claims to better describe the apparatus and define over the prior art.

Regarding the argument that the pick bar prevents manipulation of the tumblers, the examiner agrees but would also like to point out that column 4, lines 14-19, state that without a key, the tumblers fall and prevent rotation. Therefor the pick bar does in fact indirectly prevent rotation of the lock cylinder. The examiner suggests using language such as "directly" to overcome Boag. Regarding the argument that the tumbler does not have an engaged and disengaged position with the retainer bar, the examiner respectfully disagrees. Column 6, lines 24-26 state the bar will "re-engage" with the tumblers. In order for the bar to "re-engage" the tumblers, at least a portion of the bar and the tumblers were disengaged. Regarding the argument that Loreti fails to disclose a lock housing preventing rotation of the lock cylinder relative to the lock housing, the examiner would like to note that Loreti is solely used to teach the use of springs as stated in the rejection above. The examiner appreciates applicant's invention and encourages applicant to include limitations such as those explained in paragraphs 3-5 or suggested above to overcome the prior art.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kristina R. Fulton whose telephone number is 571-272-

7376. The examiner can normally be reached on Monday-Friday, 7am-4:30pm, alternating Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patricia Engle can be reached on (571) 272-6660. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Patricia L Engle/
Supervisory Patent Examiner,
Art Unit 3673

/K. R. F./
Examiner, Art Unit 3673
5/22/08